

Amendments to the Claims

Claims 1-17 (Cancelled).

18. (Previously presented) A method of providing material into a deposition chamber comprising:

providing a reservoir in fluid communication with a deposition chamber;
providing at least one metastable specie within the reservoir
containing the at least one metastable specie within the reservoir; and
after the containing, flowing the at least one metastable specie from the reservoir into the deposition chamber, the flowing the at least one metastable specie comprising:

introducing the at least one metastable specie into the deposition chamber through an inlet; and

passing at least a portion of the at least one metastable specie through a disperser.

19. (Original) The method of claim 18 wherein the deposition chamber is an ALD chamber.

20. (Cancelled).

21. (Previously presented) The method of claim 18 further comprising:
activation of a substance within the reservoir to form at least one metastable specie.

22. (Previously presented) The method of claim 18 further comprising:
remotely forming at least one metastable specie; and
providing the remotely formed metastable specie into the reservoir in metastable form.

23. (Previously presented) The method of claim 18 wherein the at least one metastable specie comprises a first metastable specie, wherein the reservoir is a first reservoir and further comprising:
providing a second metastable specie within a second reservoir;
after the providing the second metastable specie, containing the second metastable specie within the second reservoir; and
flowing the second metastable specie from the second reservoir into the deposition chamber.

24. (Original) The method of claim 23 wherein the first metastable specie and the second metastable specie are flowed into the deposition chamber sequentially relative to one another.

25. (Original) The method of claim 24 wherein the chamber is purged after flowing the first metastable specie and before flowing the second metastable specie.

26. (Original) The method of claim 23 wherein at least some of the first metastable specie and at least some of the second metastable specie are flowed into the deposition chamber simultaneously.

27. (Currently amended) A layer deposition method comprising:
providing a catalyst within an activation reservoir;
providing a hydrogen source in fluid communication with the activation reservoir;
catalytically generating activated hydrogen within the activation reservoir;
during the generating, containing the activated ~~nitrogen~~ hydrogen within the activation reservoir, and
after the generating; flowing the activated hydrogen from the activation reservoir into a reaction chamber.

28. (Original) The layer deposition method of claim 27 wherein the catalyst comprises Pt.

29. (Original) The layer deposition method of claim 27 further comprising providing TiCl_4 to the reaction chamber.

30. (Previously presented) A layer deposition method comprising:
providing a substrate within a deposition chamber;
remotely generating activated hydrogen;
flowing the activated hydrogen into at least one pre-deposition-chamber reservoir, the at least one pre-deposition chamber reservoir having a combined first volume;
flowing the activated hydrogen from the at least one pre-deposition-chamber reservoir into a deposition chamber, the deposition chamber having a second volume which is less than the first volume; and
adsorbing at least a portion of the activated hydrogen onto a substrate.

31. (Previously presented) The layer deposition method of claim 30 further comprising:

flowing TiCl_4 into the deposition chamber; and
adsorbing at least a portion of the TiCl_4 onto the substrate.

32. (Previously presented) A method of depositing material on a substrate comprising:

generating a first metastable specie;
containing the first metastable specie within a first reservoir, the first reservoir having a first volume;

flowing the first metastable specie from the first reservoir into a deposition chamber having a second volume, the second volume being less than the first volume; and

depositing at least some of the first metastable specie onto a substrate.

33. (Previously presented) The method of claim 32 wherein the flowing of the metastable specie from the reservoir into the chamber comprises flushing the metastable specie from the reservoir by flowing a carrier gas.

34. (Previously presented) The method of claim 33 wherein the flowing of the carrier gas comprises flowing the carrier gas through the reservoir.

35. (Previously presented) The method of claim 32 wherein the generating occurs within the first reservoir.

36. (Previously presented) The method of claim 32 wherein the generating of the first metastable specie is remote from the first reservoir and wherein the method further comprises flowing the metastable specie into the reservoir.

37. (Previously presented) The method of claim 32 wherein the generating comprises activation of at least one precursor utilizing one or more of heat activation, plasma activation and catalytic activation.

38. (Previously presented) The method of claim 32 wherein the generating occurs within the first reservoir and comprises activation of at least one precursor by providing a catalyst within the first reservoir.

39. (Previously presented) The method of claim 32 further comprising generating a second metastable specie.

40. (Previously presented) The method of claim 39 further comprising:
containing the second metastable specie within a second reservoir,
wherein the second reservoir is in selective fluid communication with the deposition chamber; and

flowing the second metastable specie from the second reservoir into the deposition chamber.

41. (Previously presented) The method of claim 40 wherein the flowing of the first metastable specie into the deposition chamber and the flowing of the second metastable specie into the deposition chamber at least partially overlap.

42. (Previously presented) The method of claim 40 wherein the flowing of the first metastable specie into the deposition chamber and the flowing of the second metastable specie into the deposition chamber do not overlap.

43. (Previously presented) The method of claim 42 further comprising:
purging the deposition chamber between the flowing of the first metastable specie and the flowing of the second metastable specie.

44. (Previously presented) The method of claim 39 wherein the second metastable specie is the same as the first metastable specie.

45. (Previously presented) An atomic layer deposition method comprising:

providing a metastable-specie-containment reservoir in selective fluid communication with a reaction chamber;

containing a metastable specie in the metastable-specie-containment reservoir; and

flowing the metastable specie from the metastable-specie-containment reservoir into the reaction chamber, the flowing comprising:

purging the metastable-specie-containment reservoir, wherein the purging flushes the metastable specie from the metastable-specie-containment reservoir into the reaction chamber through one or more metastable-specie inlets; and

compressing the metastable specie into the reaction chamber, the reaction chamber comprising a volume that is less than an initial volume occupied by the metastable specie prior to the flowing from the metastable-specie-containment reservoir.

46. (Previously presented) The method of claim 45 wherein the metastable-specie-containment reservoir is a first metastable-specie containment reservoir and the metastable specie is a first metastable specie, the method further comprising:

providing a second metastable-specie-containment reservoir;
flowing a second metastable specie from the second metastable-specie-containment reservoir.

47. (Previously presented) The method of claim 45 wherein the one or more metastable-specie inlets comprises an metastable-specie inlet having a valve.

48. (Previously presented) The method of claim 45 further comprising:
providing a substrate platform with in the reaction chamber; and
providing a dispersion head between the one or more metastable specie inlets, collectively, and the substrate platform, wherein the flowing from metastable-specie-containment reservoir further comprises passing the metastable specie through the dispersion head.